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Pesticide Fact Sheet Number 191: Metaldehyde

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16. Abstract (Limit: 200 words)

This document contains up-to-date chemical information, including a summary of the Agency's regulatory position and rationale, on a specific pesticide or group of pesticides. A Fact Sheet is issued after one of the the following actions has occurred.

1. Issuance or reissuance of a registration standard,
2. Issuance of each special review document;
3. Registration of a significantly changed use pattern;
4. Registration of a new chemical; or
5. An immediate need for information to resolve controversial issues relating to a specific chemical or use pattern.

17. Document Analysis a. Descriptors

Pesticides, regulations, Chemical Information Fact Sheet, Use Patterns, science findings.

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

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540/FS-89-029

EPA Pesticide Fact Sheet

Name of Chemical: Metaldehyde
Reason for Issuance: Registration Standard
Date Issued: December 23, 1988
Fact Sheet Number: 191

1. DESCRIPTION OF CHEMICAL

Common Name : Metaldehyde
Generic Name: 2,4,6,8-tetramethyl-1,3,5,7-tetraoxycyclo-octane
Trade Name : Meta, Metason, Halizan, Antimilace, Namekil, Cekumeta
OPP Chemical Code: 053001
Chemical Abstracts Service (CAS) Number: 9002-91-9 (homopolymer); 108-62-3 (tetramer)
Year of Initial Registration: 1962
Pesticide Type: Molluscicide
Chemical Family: Hydrocarbon
U.S. Producer: Lonza, Incorporated

2. USE PATTERNS AND FORMULATIONS

Application Sites: Terrestrial (food and nonfood crop); greenhouse (food and nonfood crop); domestic and nondomestic outdoor; indoor.

Predominate Uses: Home orchards; gardens and ornamental; and commercial vegetables (artichokes, broccoli, cauliflower, lettuce, cabbage, and tomatoes) and fruit (citrus, stone, pome and strawberries).

Methods of Application: Hand, ground or aerial equipment.

Types of Formulations: Wettable powders, dusts, emulsifiable concentrates, flowable concentrates, granules, ready-to-use products (liquids) and pelleted/tableted.

3. SCIENCE FINDINGS

Summary Science Statement: Metaldehyde is of moderate to low acute toxicity and is not a dermal irritant.

Subchronic and chronic toxicity data are not available to assess this chemical. Poisoning incident reports show that the use of metaldehyde has been associated with dog poisonings, resulting in death.

Data are not available to assess the ecological effects or environmental fate of metaldehyde.

Chemical Characteristics:

Physical State: Crystalline powder
Color: White
Odor: Aldehyde odor
Melting Point: 246°C
Bulk Density: 65g/100cc
Solubility: at 20°C, 0.2 g/L in water and very slightly soluble in alcohol
Vapor Pressure: 1mm Hg at 20°C
Flammability: 36-40°C

Toxicology Characteristics: The only acceptable toxicological study is a partially acceptable mutagenicity study. Acute studies are available, however, the purity of the test material must be established before they can fulfill guideline requirements.

Acute Toxicology:

Oral--Rat: 383 mg/kg (females), Toxicity Category II[1]; 734 mg/kg (males), Toxicity Category III

Dermal--Rat: >5 g/kg, Toxicity Category III

Inhalation--Rat: >13.5 mg/L/4 hr, Toxicity Category III

Primary Dermal Irritation--Rabbit: Not a dermal irritant

Mutagenicity: In the acceptable portion of a paritally acceptable study, metaldehyde was not found to be mutagenic.

Environmental Characteristics: Data are not available to assess the environmental characteristics of metaldehyde.

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[1]Refer to 40 CFR 156.10 for a discussion of toxicity categories.

Ecological Characteristics: None of the available data meet Agency requirements but they do suggest that metaldehyde is of low toxicity to birds and is practically nontoxic to aquatic organisms.

Tolerance Assessment: Although tolerances had not been generally required for food/feed uses of baits, there is a food additive regulation of zero parts per million (ppm) for strawberries (40 CFR 185.4025). This is not supported by adequate data. The toxicological data are inadequate to allow an assessment of any dietary exposure to metaldehyde.

4. SUMMARY OF REGULATORY POSITION AND RATIONALE. The Agency, historically, did not consider the use of baits in-field to protect fruits and vegetables to be a food use and tolerances were not required. However, updated guidelines, issued in October 1982, state that if residues could occur in foods or feed, the use is considered to be a food use and a petition for tolerance or exemption from tolerance is required. The Agency has no basis for concluding that residues will not occur in the food and feed crops treated with metaldehyde. Therefore, the Agency will require data on metaldehyde to support food uses.

   The Agency will also continue to require precautionary labeling statements to protect dogs and other pets.

5. SUMMARY OF MAJOR DATA GAPS. Essentially all data, including toxicological data required to support food uses, are required for metaldehyde.

6. EPA CONTACT

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